

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. APPLICATION NO. 09/399,682
ATTORNEY DOCKET NO. A8009

Amended 7/10/03

REMARKS

Claims 1-21 are all the claims pending in the application. The independent claims have been amended to highlight the differences between the claimed invention and the applied references. In particular, each of the independent claims now requires that the federated data source obtain information from one or more other federated data sources. Furthermore, each independent claim now requires that the federated data sources provide a schema structural view of the data, and the federated data source that received the request for data provide a unified schema structural view that includes the data of the plurality of datastores, and also the schema structural view provided to it from the other federated data sources.

The search gateway does not provide a schema structural view, but the federated data unified structural schema incorporates also the data from the search gateway.

The dependent claims have been amended in line with the independent claims.

The claim amendments include no impermissible new matter. The originally-filed specification describes that a federated datastore can include other federated datastores, and that federated datastores can provide a unified structural schema of the data retrieved (see "with mapping" beginning on page 10 of the originally-filed specification; also "schema mapping" beginning at the bottom of page 43).

The search gateway data sources expand a query by obtaining data from a plurality of other data sources, but the search gateway data source does not provide a structural schema. When the given federated data source retrieves data from the search gateway data source, it incorporates that data into a unified structural schema as now mentioned in the independent claims.

Rejection under 35 U.S.C. §102(e): Ratnaraj.

The Examiner rejected claims 1, 2, 6-9, 13-16, 20, and 21 under 35 U.S.C. § 102(e) as being anticipated by Ratnaraj. The Examiner's reconsideration is respectfully requested.

Of these rejected claims, only 1, 8, and 15 are independent. These three independent claims are similar in many ways, and Applicant respectfully submits that a study of independent claim 1 will cast light on this rejection as it applies also to independent claims 8 and 15.

Independent claim 1 includes a requirement, among others, for receiving a request at a federated data source. Ratnaraj does not meet this requirement. In Ratnaraj, there is only one database, the integrated database 34. The integrated database 34 is a terminal data repository.

In making this rejection, the Examiner asserted that Ratnaraj teaches a federated data source in Fig. 3, item 42, as explained in Ratnaraj at column 7, lines 25-52. Applicant respectfully submits that the Examiner has misunderstood the prior art teachings of Ratnaraj in this regard.

Instead of being a valid prior art teaching of a federated data source, item 42 in Ratnaraj is a web server. It contains no data sources, but is just a web interface to the integrated database 34. Column 7, lines 25-27 of Ratnaraj state:

Fig. 3 illustrates in more detail the World Wide Web server 42 which provides access to integrated database 34 by a remote user via the Internet.

Items 74 and 75 may, at first glance, appear to be individual data sources (and so this may be why the Examiner thinks server 42 appears to be a federated data source). Instead of being data sources, however, items 74 and 75 are nothing more than forms that the user can complete so that the web server 42 can put the user's query to the integrated database 34 in a convenient and user-friendly way. For corroboration of the foregoing points, the Examiner may refer to column 7, lines 54-57:

Predefined graphical user interface forms 74 are provided as part of the user interface for entering retrieval criteria specifications and providing hyperlinked descriptions of the content of integrated database 34 to the user.

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In making this rejection, the Examiner stated that he thought that Fig. 3, item 72 provides a prior art teaching of a search gateway data source. In fact, item 72 of Ratnaraj's Fig. 3 is a CGI gateway that takes the user inputs collected from forms 74, and puts them into a query for the item 70 to use to access the integrated database 34. Item 72 is just a collector and reformatter. It is not a search gateway data source, or a federated data source, or even a terminal data repository.

The Examiner's rejection for anticipation by Ratnaraj is respectfully submitted to be incorrect as a technical matter. What the Examiner understood to be a federated data source is a web server; what the Examiner understood to be terminal data repositories are forms in a user interface; and what the Examiner understood to be a search gateway data source is a program to reformat form inputs into a query format. The rejection is thus based on a case for anticipation that lacks evidence of prior art teaching of most of the requirements of claim 1. Since the lack of even one requirement is enough to defeat the rejection for anticipation, Applicant respectfully submits that it is clear that the rejection for anticipation by Ratnaraj should be withdrawn.

Applicant therefore respectfully requests the Examiner to withdraw this rejection of independent claim 1, and also independent claims 8 and 15, and also their respective dependent claims 2, 6, and 7; 9, 13, and 14; 16, 20, and 21.

Rejection under 35 U.S.C. §103(a): Ratnaraj.

The Examiner rejected claims 3, 10, and 17 under 35 U.S.C. § 103(a) as being unpatentable over Ratnaraj. These claims depend from claims 1, 8, and 15, respectively. After considering what the teachings of Ratnaraj would have suggested to the artisan of ordinary skill, Applicant respectfully finds in Ratnaraj no teaching or suggestion that would have enabled such a person to have modified Ratnaraj so as to achieve the subject matter of any of the independent claims, much less dependent claims 3, 10, and 17. Any method according to Ratnaraj's teachings lacks the requirements of the independent claims as mentioned above in the discussion of independent claim 1.

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Applicant thus respectfully submits that Ratnaraj does not render any of claims 3, 10, and 17 unpatentable within the meaning of 35 U.S.C. § 103. Applicant therefore respectfully requests the Examiner to withdraw this rejection of claims 3, 10, and 17.

Rejection under 35 U.S.C. §103(a): Ratnaraj in view of Lai.

The Examiner rejected claims 4, 5, 11, 12, 18, and 19 under 35 U.S.C. § 103(a) as being unpatentable over Ratnaraj in view of Lai. Here, claims 4 and 5 depend ultimately from independent claim 1; 11 and 12 from independent claim 8; and 18 and 19 from independent claim 15.

Applicant has already pointed out that Ratnaraj is deficient with respect to many of the requirements of independent claim 1, namely, the lack of any teaching or suggestion in Ratnaraj of the required federated data source, and the requirement for retrieving, from the federated data source, data from one or more terminal data repositories, and one or more search gateway data sources. Applicant respectfully finds in Lai no teaching or suggestion that compensates for the above-identified deficiencies of Ratnaraj vis-à-vis claim 1. Even taken for what they would have meant as a whole to an artisan of ordinary skill, the combined teachings of Ratnaraj and Lai would not have enabled such a person to have achieved the subject matter of independent claim 1. Additional, untaught modifications would still have been necessary.

Applicant therefore respectfully submits that dependent claims 4, 5, 11, 12, 18, and 19 are thus patentably distinguishable over the combined teachings of Ratnaraj and Lai, and that these claims are not rendered unpatentable by these two references, taken individually or in any combination. Applicant thus respectfully requests the Examiner to withdraw this rejection of claims 4, 5, 11, 12, 18, and 19.

Rejection under 35 U.S.C. § 102: Lagarde.

The Examiner rejected claims 1, 8, and 15 under 35 U.S.C. § 102(b) as being anticipated by Lagarde. Applicant has amended each of these claims to reflect that a federated data sources provides a schema structural view of the data from underlying federated (heterogeneous) data

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sources. Applicant also added the limitation to each of these claims that a federated data source can search one or more federated data sources.

In the claimed invention, there is provided a unified structural schema for the data retrieved from underlying data sources. Applicant respectfully draws the Examiner's attention to the following passages in the specification for more explanation on this point.

A federated data source 100 is a virtual datastore which combines several heterogeneous datastores 102 into a consistent and unified conceptual view. This view, or a federated data source, is established via schema mapping 104 of the underlying datastores. The users interact with a federated data source 100 using the federated schema, without needing to know about the individual datastores 102 which participate in the federated data source 100. (see page 8, lines 11-15).

A federated schema is the conceptual schema of a federated datastore 100, which defines a mapping between the concepts in the federated datastore 100 to concepts expressed in each participating datastore schema. In general, a schema mapping handles the difference between how the data are stored in the datastore (as expressed by the datastore's conceptual schema) and how the user wants to process them in the application program. This mapping can also be extended to incorporate relationship associations among entities in a federated datastore, ... (see page 44, lines 3-8).

The foregoing points are not themselves in any claim, but should help the Examiner understand how the claimed "unified structural schema" and claimed "structural schema" are realized in one embodiment according to the invention. In view of the above-identified requirements pertaining to the unified structural schema, Applicant respectfully submits that the independent claims patentably distinguish over Lagarde.

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Lagarde teaches a web server 11, which uses a database gateway server 18 that accesses various different databases 19-19c (which may be databases of different kinds located in a variety of places). After retrieving data from various data sources, Lagarde stores the data in a file. (*see* column 7, lines 41-45). However, Lagarde does not teach or suggest providing a schema structural view of the data for underlying heterogeneous data sources by a web server 11 or by a database gateway server 18, nor does it teach or suggest providing a unified structural schema as set forth in the claims. Thus, neither web server 11 nor database gateway server 18 could server as a federated data source.

Furthermore, Applicant has amended claim 1 to require that a federated data source can search one or more federated data sources. This limitation is well supported in the original specification. (*see* Fig. 4; page 9, lines 9-11; page 45, lines 5-7). This limitation further distinguishes claim 1 over Lagarde.

Lagarde's teaching of a database gateway server cannot reasonably be said to meet the above identified requirements of the independent claim 1, or any of the requirements relating to providing a unified structural schema. Lagarde would not have rendered unpatentable or anticipated the invention defined by claim 1 within the meaning of 35 USC §§ 102 or 103. Applicant therefore respectfully requests the Examiner to withdraw this rejection of independent claim 1.

The foregoing points are respectfully submitted to apply with equal force, at least by analogy, to this rejection of independent claims 8 and 15 in view of their similarities to independent claim 1. Applicant therefore respectfully also requests the Examiner to withdraw this rejection of independent claims 8 and 15.

Conclusion and request for telephone interview.

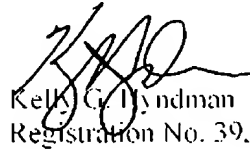
In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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